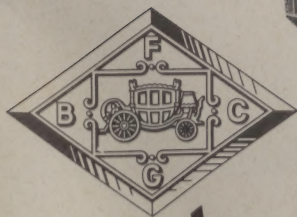
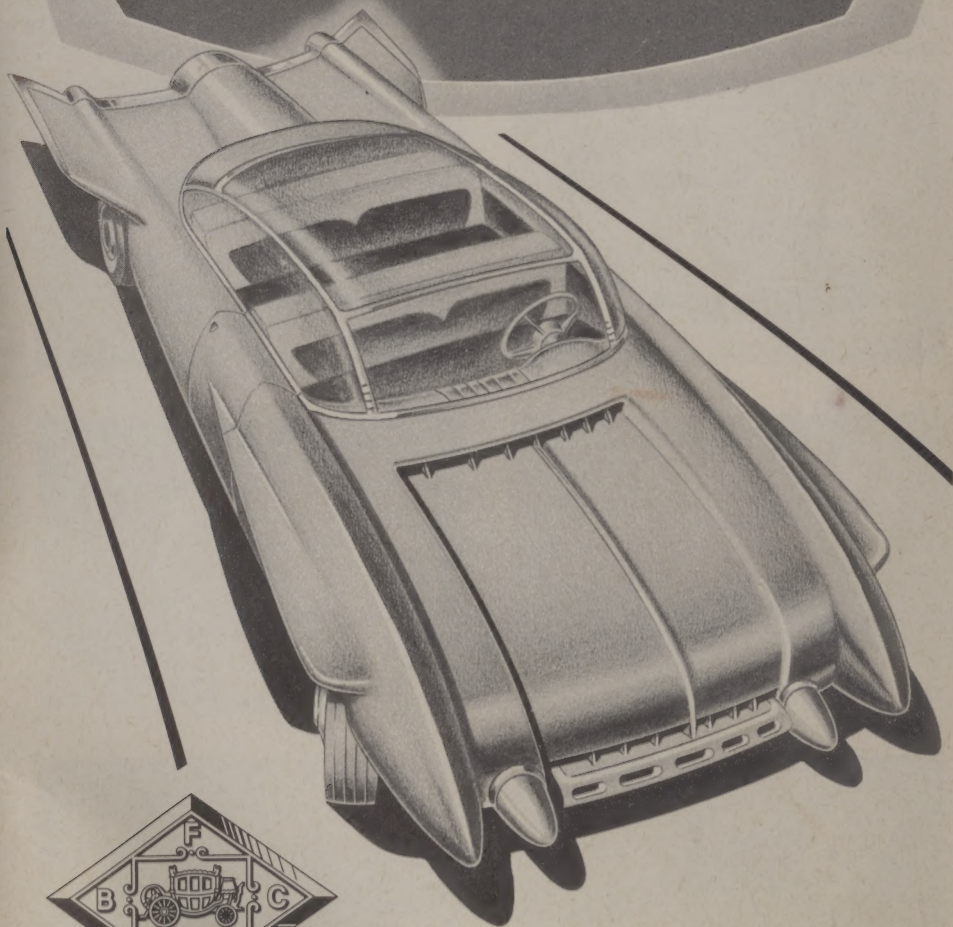


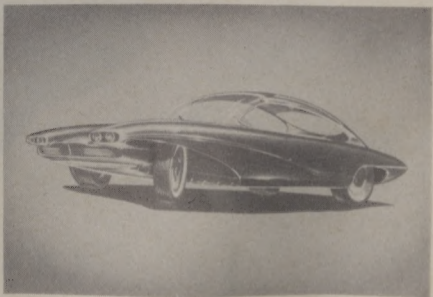
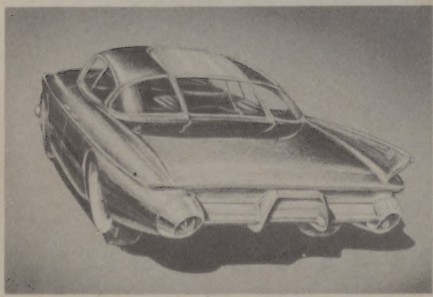
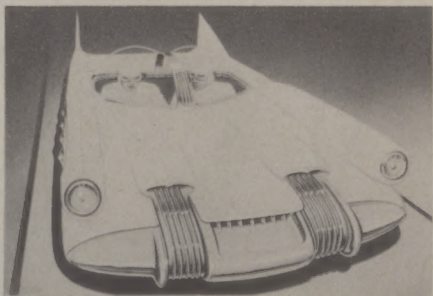
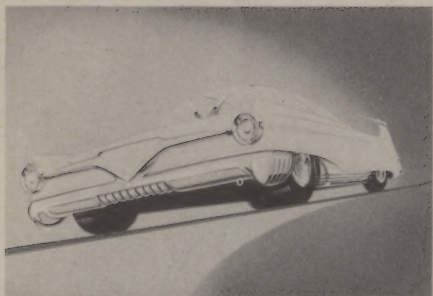
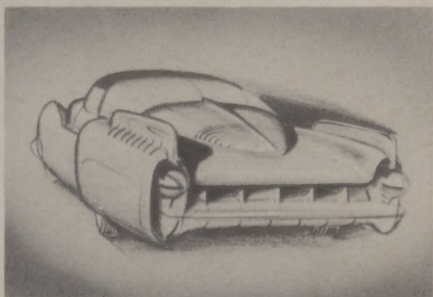
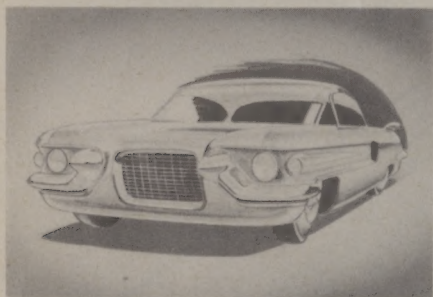
HOW TO BUILD A MODEL CAR



FISHER BODY
CRAFTSMAN'S GUILD

• TO SPARK YOUR IMAGINATION

Mr. Harley Earl, chief of General Motors Styling Studios, says that every normal youth has a rich gift of imagination. He feels this gift could be turned to some form of creative work, *if a youth would work hard enough at using and training it.* Mr. Earl feels that many youths *who are not now doing so* could train themselves for successful careers as automobile designers. The first step, for beginners, is *imitation*—that is, studying what the experts are doing—using their work as a guide in learning to draw cars that are new and exciting. The drawings below are futuristic styles done by professional car designers—a gold mine of advanced new ideas for young designers. They are reproduced here to spark the imagination of Guild members, particularly beginners. Borrow freely from these—and from other futuristic styles you find in magazines or in the GUILDSMAN. *Borrow ideas you like from the experts—but use them in your own way to create original new designs of your own.*

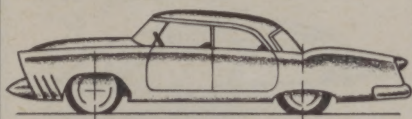


• LEARNING TO DESIGN A CAR

Don't let the word "design" scare you. Any one can learn to draw, *if he is willing to practice*—and designing is nothing more than drawing *with a purpose*. The fact that you never learned to draw doesn't mean you *can't*. The sketches on this and the three following pages give you the practice steps for drawing an automobile. Work at them for an hour or two every day for a week. You'll be surprised how much skill you gain in that short time. Keep on for two or three weeks, and you'll really have the "feel" of it. *Of course, you don't need to draw at all to build a model car for the Guild competition. You can shape your design in modeling clay—and that's a lot of fun.* (See the clay modeling instructions on Page 7.) The Guild competition offers you rewards big enough to call forth your very best effort. If you work, you'll win—valuable experience, to say the least—and, very possibly, one of the several hundred Guild awards. So, now, let's go! First, study carefully Drawings "A" and "B" (on sketch sheet you received with this book). They give you measurements and other requirements. Then *practice* the following steps:

A

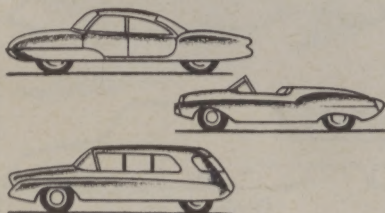
Trace a few present day cars from a magazine.



This gives you the feel and proportions of car "form."

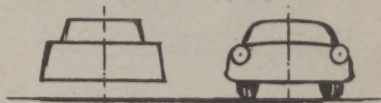
B

Try a few side views next. Do these free hand.



C

Direct front and rear view designing.



Block in

Add lights, wheels



Grille design

Other details

D

"Perspectives" tell more.

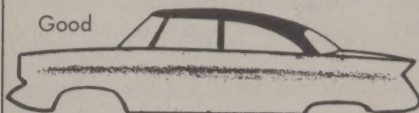


Make your design over a car from a catalog illustration.

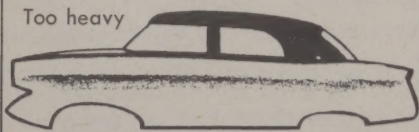
E

You should strive for a light, graceful upper structure in your design.

Good

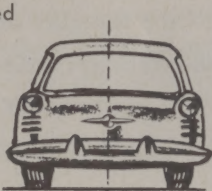
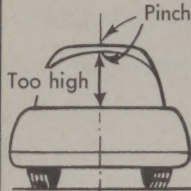


Too heavy

**F**

Rear views

Pinched

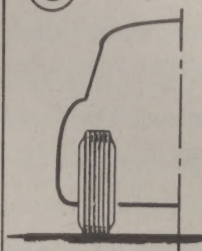


Poor proportion

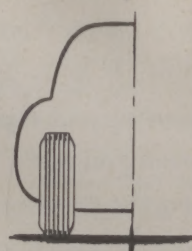
Good proportion

G

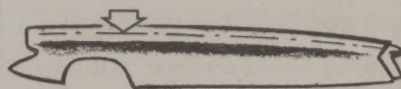
Design of "section" through car.



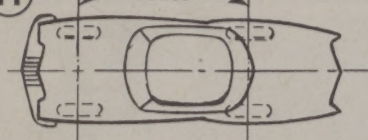
"Crisp" design of section through car will result in longer highlights and better streamlining. See drawing below.



Too "round." Highlights will be soft and short. Design will be more difficult to streamline.

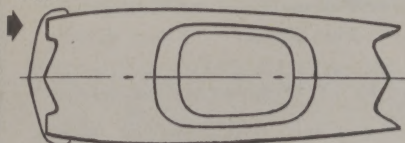
**H**

Axles

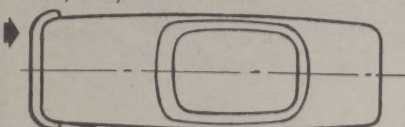


Plan view of your design is important.

"Fast"



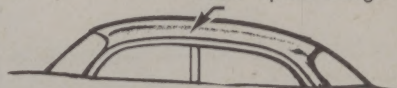
"Slow, boxy"

**I**

Pinched (poor)



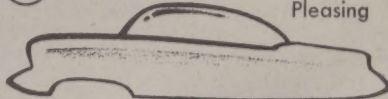
Good "space design"



Side view of upper structure proportions

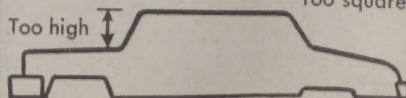
J

Pleasing



Too high

Too square

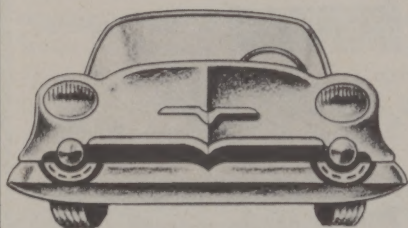
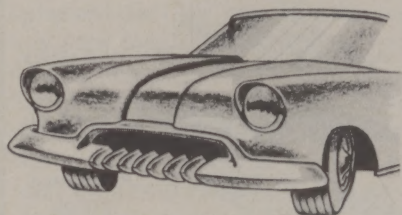


Outline of car

(K)

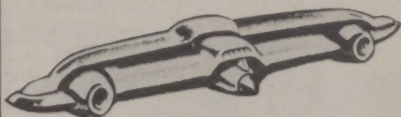
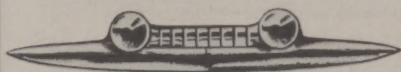
Front-end composition
or design

Work out design in "perspective"—
as well as head-on view.



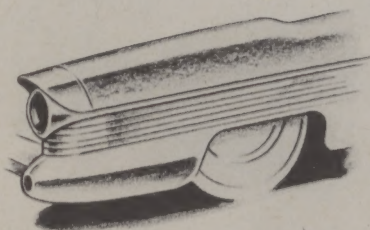
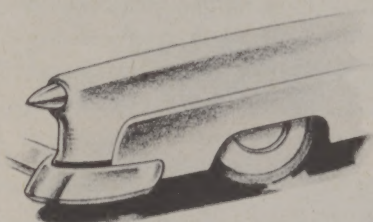
(L)

Front-end
theme "doodling"

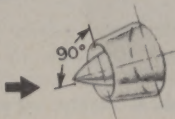


(M)

Fender and tail-light
theme "doodling"

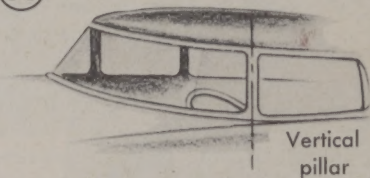


Cones and
bullet shapes
in perspective

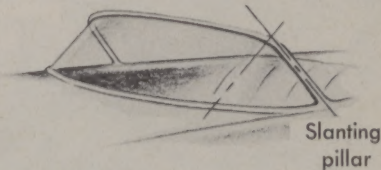


(N)

Study windshields



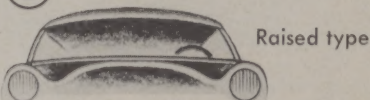
Vertical
pillar



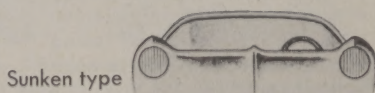
Slanting
pillar

(O)

Study hoods



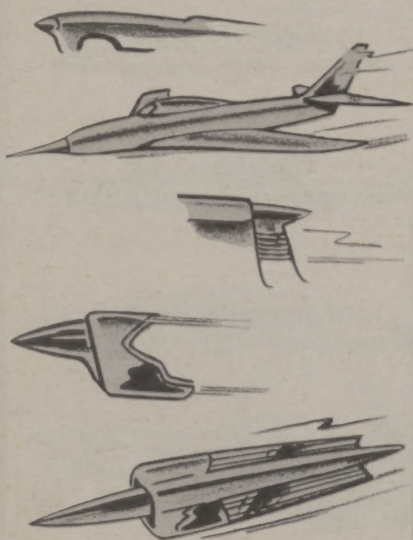
Raised type



Sunken type

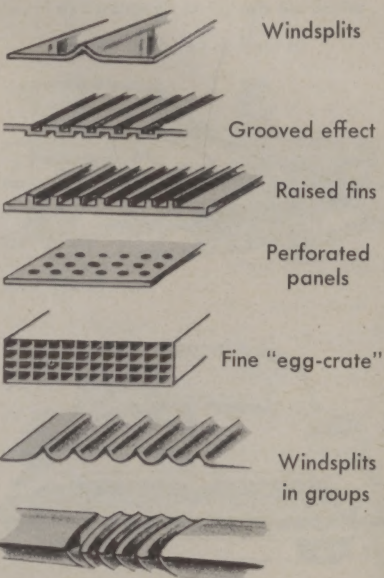
P

Line, form and texture suggest speed and graceful motion.



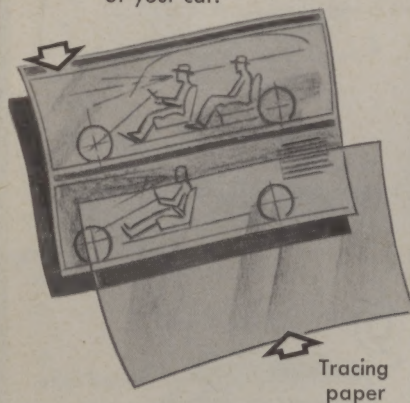
Q

Various types of ornamentation



R

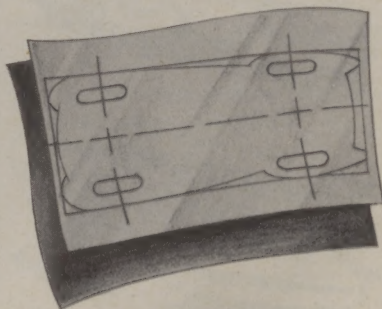
Use Drawing "A" or "B" (on sketch sheet you received with this book) to develop side view of your car.



After careful study and "design thinking," you can work over any one of the model types given on Drawings "A" and "B," using tracing paper on which to draw your design.

S

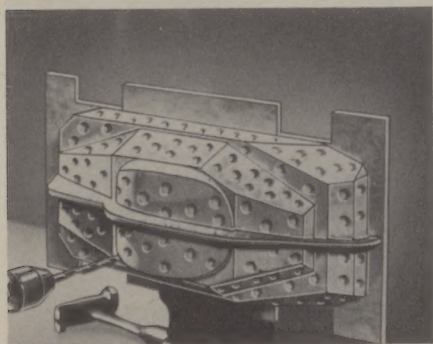
Using the over-all length, over-all width and wheelbase (on Guild sketch sheet), develop the plan view of your model, drawing axle lines as shown.



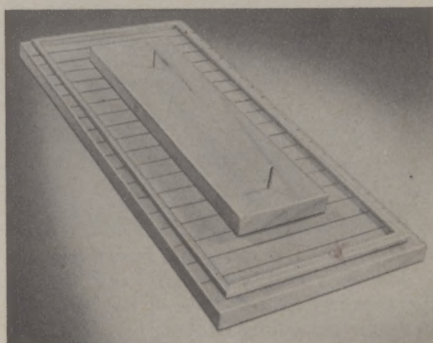
Plan view needs special study and attention to give design speed and beauty. Remember, this is highly important.

• TESTING YOUR DESIGN IN CLAY

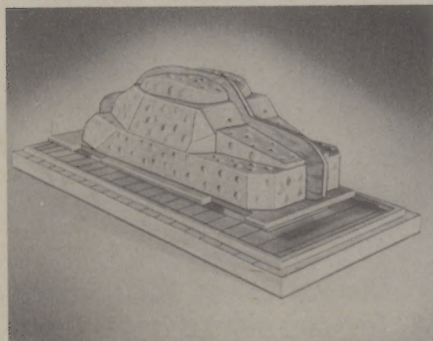
Work out your model car design in clay, as professionals do. In clay, you can change your design easily, as you get new ideas—and you will **NEED** the clay model to use as a pattern, if you cast your final model in plaster—or to make templates for a wood model, as explained farther on. If you cannot buy grease-base modeling clay in your own locality, write the Guild Technical Supervisor for a supplier's address. To save clay, make a wood form (armature) from scrap wood blocks, as shown in Photo 1. (This is for a closed model.) Attach a bottom board, as shown, to support clay. Make this board narrower and shorter than model. Notch it so you can insert cardboard wheels, giving the "feel" of a real car. To make an armature for a convertible model, shape a bottom board, as above, and mount on it two properly sized and shaped blocks of wood to support the hood and rear deck sections. The armature is then mounted on a surface board (Photo 2), as shown in Photo 3. Dowels or headless nails, centered within guide strips around edges of surface board, slip into holes drilled in bottom of armature. Place a $\frac{5}{8}$ -in. block (Photo 2) under armature to hold model at proper height for checking appearance with cardboard wheels.



1. Drill holes in armature to anchor clay. Six pounds of clay will do. Solid clay model requires 20 pounds.



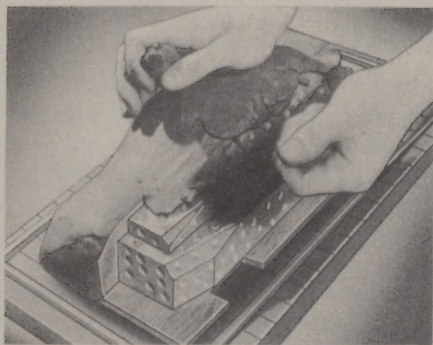
2. Guide strips are straight and should clear model $\frac{1}{2}$ in. all around. Draw station lines on board 1 in. apart, as shown.



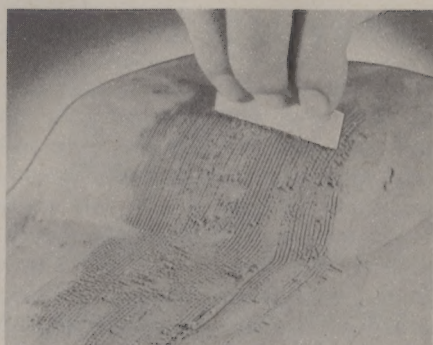
3. Armature on surface board. Guide strips are used in making templates (patterns), explained in photos that follow.



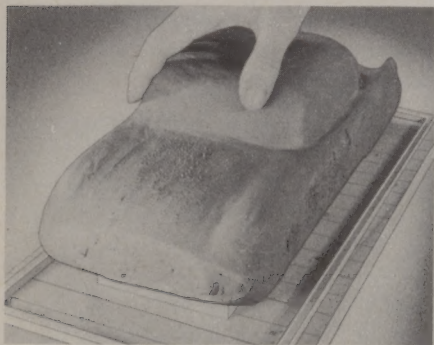
4. Soften clay so it will be easy to "work" by keeping it in hot water in a double boiler—or sieve and warming pan, as shown.



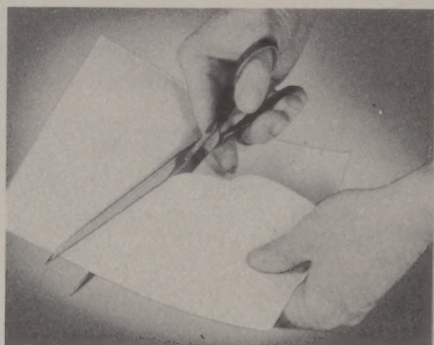
5. Press clay firmly into holes. Rough shape clay by hand. Using your drawings—or your imagination—shape and carve one side (exactly $\frac{1}{2}$ of model) to desired design.



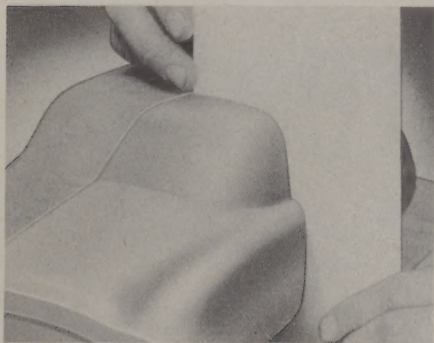
6. Make modeling tools shown in photos. Above, a hacksaw blade used as rough shaper. Photo 14 shows smoother made of scrap rubber; Photo 15, a tool of hardwood.



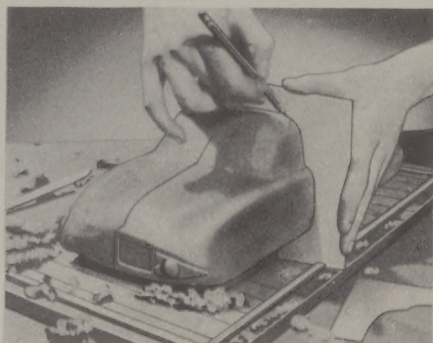
7. Much of the shaping and smoothing can be done best with your palm and fingers. Use pressure with the heel of the hand for the longer smoothing strokes.



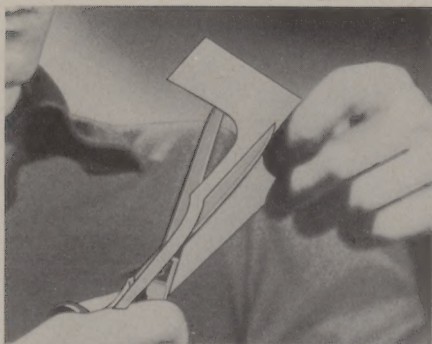
8. When one side of model is finished, make cardboard templates (patterns) of this side—one at each station line on surface board. Cut cardboard roughly to shape first.



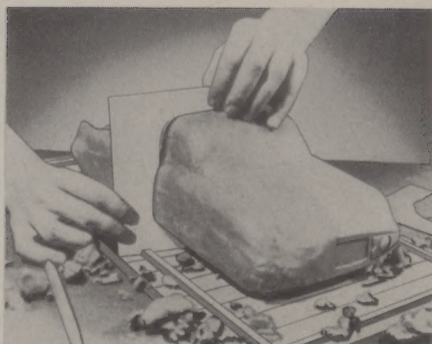
9. Notch out bottom edge of rough template to fit over guide strip (see photo 10) when template is sunk slightly into clay—in a perpendicular (\perp) position.



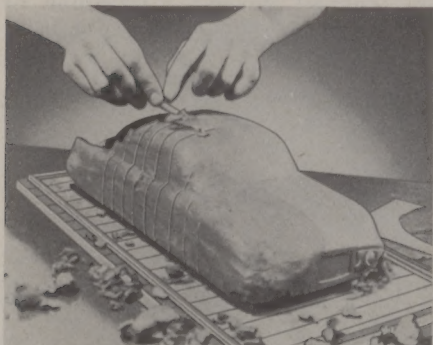
10. Trace exact outline of one-half of model on template. Be sure bottom edge of template rests evenly on surface board—and is notched to fit snugly over guide strip.



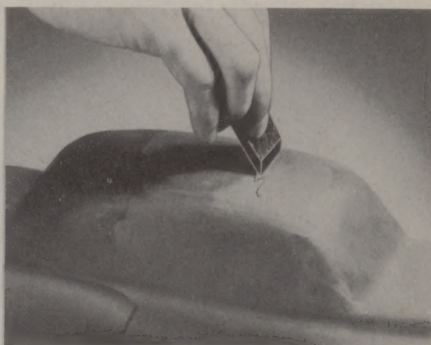
11. Now, cut out template along your pencil line with scissors or sharp, pointed carving blade. This makes an accurate pattern of one half of model at a given station line.



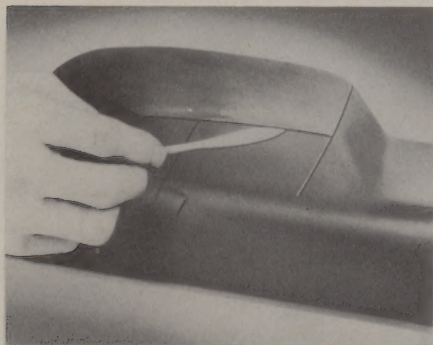
12. With templates, you can make unfinished side of model match finished half. At proper station line, rest each template on surface board. Sink template into clay.



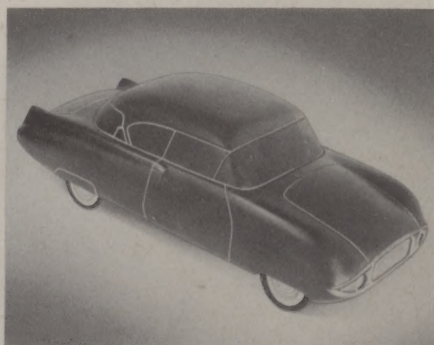
13. Using screwdriver as a carving tool, carefully remove clay between sunken vertical lines made by edges of templates. Smooth surface to exact level of template cuts.



14. Rubber smoothing tool (made from old tire) is excellent for smoothing large, sweeping areas of clay model—to slick surface, rub with cellophane or smooth paper.



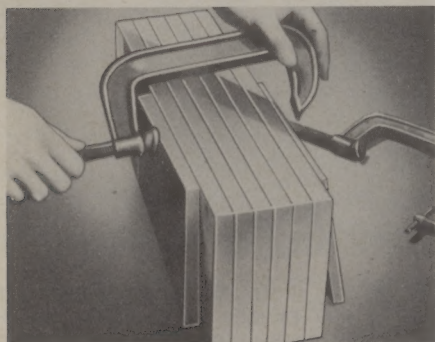
15. For window outlines and other sharply defined details, a spear-shaped tool with rounded point is most effective. Finish all details of clay model as neatly as possible.



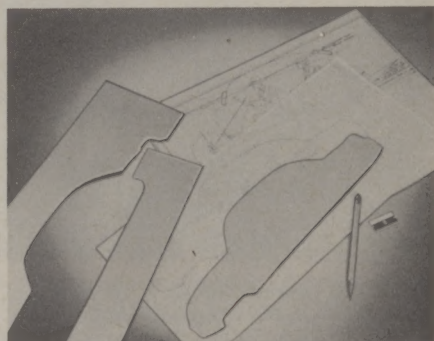
16. This illustration shows how you can place cardboard wheels in position as you develop your clay model—to give it a real car look. Model rests on $\frac{5}{8}$ -in. block.

• HOW TO MAKE A WOOD MODEL

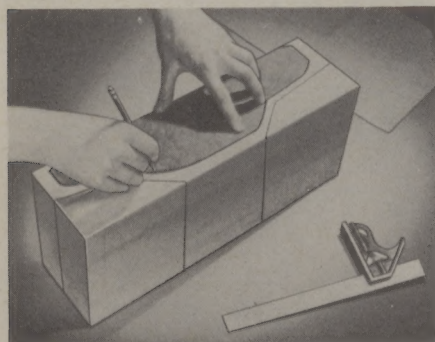
You do not need a *solid* block of wood to make a model car for the Guild competition. *You can make your own block* of the size required using the measurements given on Drawings "A" and "B." To do this simply glue together $\frac{3}{4}$ -in., or thicker, boards. Make sure the surfaces are smooth and the grain runs in the same direction before gluing. You don't even need C-clamps. You can use rocks or heavy pieces of metal to hold the boards together while the glue is setting. (Page 15 tells how to shape and glue wood for a convertible model.) The types of wood that can be cut and carved most easily are: Balsa, white pine, cypress, basswood, poplar or mahogany. Before you start the rough cutting, square your wood block—that is, make sure the ends and sides all meet at right angles—like this: \square . You can do the necessary cutting and carving with only a few tools that are easy to buy or borrow: A saw, wood file, chisel, large and small gouges (curved chisels), a hammer, or mallet, and sandpaper. Follow the steps shown in the pictures below:



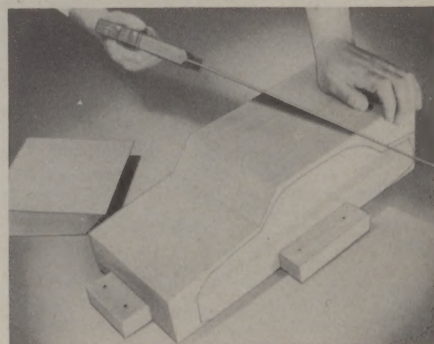
1. Sand boards smooth and glue together. Use casein-base, cold glue. Make block $\frac{1}{2}$ -in. larger, all around, than model.



2. From your drawings—or clay model—draw and cut out of cardboard an accurate side view pattern of your model.



3. Trace this pattern on both sides of your wood block. Also rule off waste areas of block, as shown.



4. Using a common saw, remove the large waste pieces, front and rear, by cutting along your ruled pencil lines.



5. Starting at the bottom of block, rule vertical (\perp) station lines, exactly one inch apart. Join these across top and bottom—also draw centerline around block



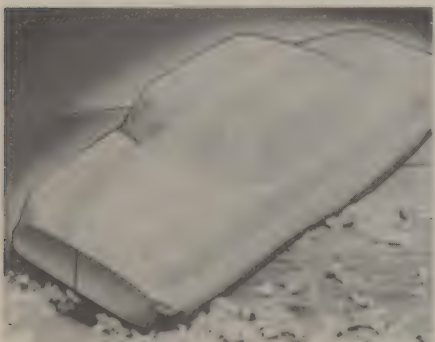
6. Saw top of block down almost to the side-view outlines of your model as traced on block. Make saw-cuts follow station lines drawn across top of the block.



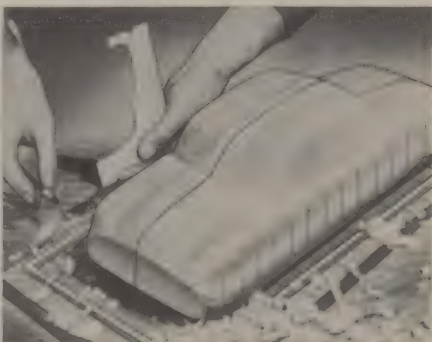
7. Now, with a chisel, carefully shave away wood between saw-cuts. Work chisel across the wood grain. Be careful not to cut below model outlines drawn on block.



8. Smooth rough-shaped block with plane to get rounded areas worked down toward actual lines of car. Fine work can be done with spokeshave and wood file.



9. Using chisel, gouges, wood file and small knife, work out roughly the major shapes along the sides of wood block, guided by your clay model.



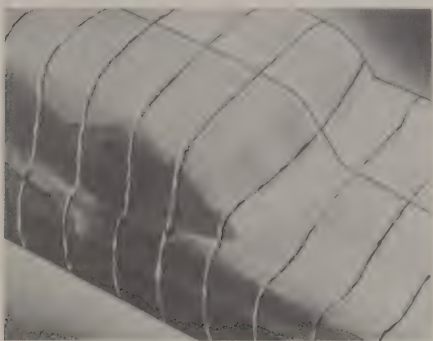
10. Mount wood model on surface board, using it as a guide in restoring station lines and centerline. Rub black crayon on pattern edges of clay-model templates.



11. Put crayoned templates in proper position and rub firmly against model to make crayon mark at high spots. High spots must be trimmed down along all lines on both sides.



12. Use small gouge to level high spots, as shown. Repeat marking and gouging until template fits exactly, top of template at centerline, bottom notched against guide strip.



13. When all station lines have been gouged out, so that all templates fit exactly, the bottoms of gouge cuts will all be in line with the exact surface of your finished model car.



14. Using chisel, carefully remove surplus wood from between gouge lines. This work must be done carefully and neatly to dress wood down to a smooth surface.



15. Put the finishing touches on the surface of your wood model by using a fine file, where necessary, and carefully smoothing the entire surface with sandpaper.



16. Mark window outlines on model, using patterns made from drawings or clay model—then carve out wood. Similar patterns should be made for all surface detail work.

• HOW TO MAKE A PLASTER MODEL

In the design studios of the automobile industry, new designs are worked into plaster models. The following instructions are adapted from the methods used by professional automobile model makers.

In casting your model car in plaster, there are just two major steps: (1) Making a 5-piece plaster mold, using your clay model as a pattern—and (2) Pouring wet plaster into this mold to form an exact duplicate of your clay model in plaster.

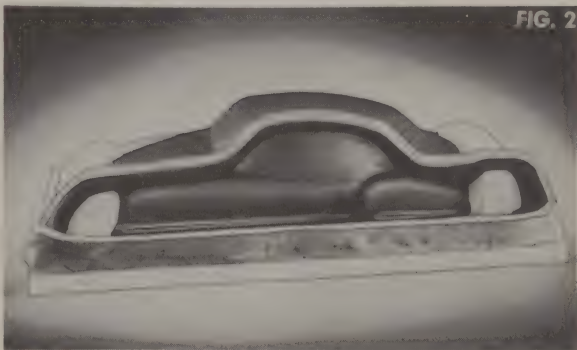
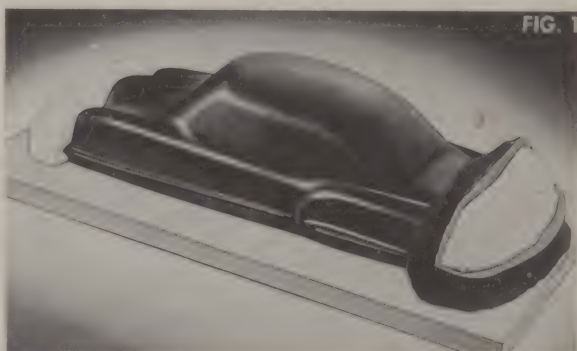
The only material you will need is about 25 pounds of hydrocal molding plaster—which you can buy from almost any builders' supply company—and a little modeling clay. Just before you are ready to use it, mix plaster in water until it is as thick and smooth as heavy cream.

To make the mold, place your clay model on a flat board which has been painted with several coats of shellac (Fig. 1). To prevent the plaster from sticking, coat the board with grease or soap jell.

Here is how you form the mold pieces: Make dams out of flattened rolls of clay and set them up on your clay model to enclose only a section of your clay model. (Fig. 1 shows about the size you should make the front and rear end pieces of the mold. Fig. 2 shows the clay dams in place for making the side sections of the mold. Fig. 3 shows the dam arrangement for making the top section.) Make only one mold section at a time.

After you have set up the clay dams, in each case, use a flat wood paddle to apply wet plaster within the dams and build it up to a thickness of at least $\frac{3}{4}$ in. Let the plaster set before applying the clay dams to make the mold section next to it. Coat the edges of the mold sections with shellac. Then, cover edges with grease or soap jell to prevent the adjoining section from sticking.

Be sure to overlap the

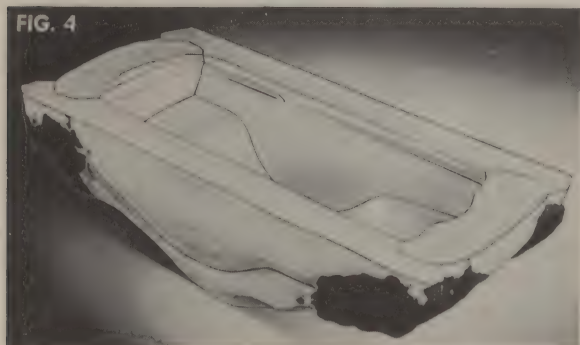
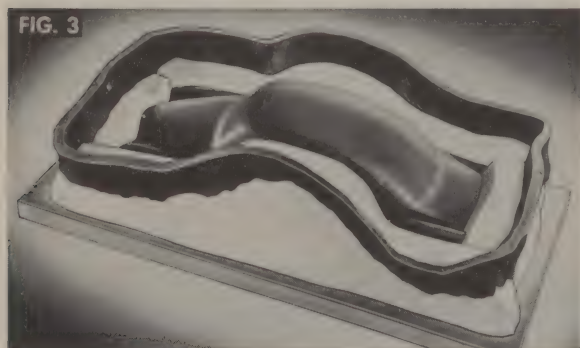


mold sections as shown in the illustrations—so that, when you have made all five sections, they will fit together as shown in Fig. 4.

Permit all mold sections to dry for at least one-half hour after they have set. Then carefully remove the sections from your clay model—and put them together as shown in Fig. 4. Bind them all together by applying strips of cheesecloth soaked in thin plaster at the corners where the mold sections meet. (These binders are shown as dark areas in Fig. 4.) Be sure to wet the mold sections thoroughly before attaching the binders—since they will not stick tightly to dry plaster. **YOU NOW HAVE AN EXACT MOLD OF YOUR CLAY MODEL.**

Next, clean and sandpaper the inside of the mold—and fill all pits or holes with clay or plaster. Then apply coats of shellac and grease (or soap jell) to the inside surface of your mold—**AND YOU ARE READY TO POUR THE CASTING OF YOUR MODEL.**

Fill the mold one-third to one-half full of wet plaster mix. Lift the mold and tip it from end to end and side to side—so that the wet mix will flow all around the mold. Do this until the mix begins to stick to all parts of the mold. Set the mold down and apply plaster with the back of your hand—until you have built the casting up to at least $\frac{3}{4}$ -in. thickness at all points. This is necessary to provide proper strength.



Place strips of cheesecloth (already cut to fit) against the wet plaster of the casting—then rub wet plaster mix into the cheesecloth. The cheesecloth is used to strengthen your plaster casting.

Permit the plaster casting to dry for at least a half hour—and then carefully remove the mold pieces. Dry out your casting thoroughly—by placing it for three or four days in a dry, well-ventilated room—before you attempt to paint it. Sand the casting thoroughly before you start.

• CONVERTIBLE INTERIORS

Fig. 1 shows how four pieces of scrap wood may be shaped and glued together to provide a passenger compartment and wheel openings for a convertible model car in the rough wood block. This method of building up a block for a convertible saves a great deal of work in carving the model.

Fig. 2 shows how the compartment may be hollowed out in a solid block. Holes are drilled at each corner of the passenger area. A keyhole saw is inserted into these holes to cut out the block from hole to hole.

The compartment floor, in either case, may be shaped from plywood or hard board and fitted into place.

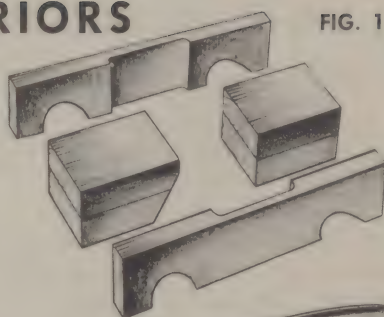


FIG. 1

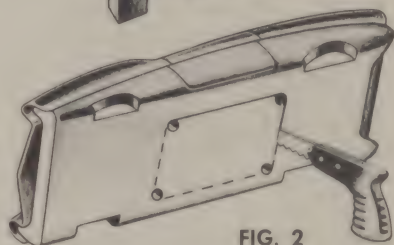


FIG. 2

SEATS—INSTALLATION METHOD

Select two straight-grained soft-wood blocks and cut them to size (Fig. 3). Using the seat patterns on the Guild sketch sheet as guides, draw the end outlines of the seat and seat back on the blocks, as shown. Carve the blocks to these patterns and score or carve a cushion design on the blocks (Fig. 4). Glue and nail the blocks together and paint them. Attach the seat to a floorboard (Fig. 5). Insert this seat-and-floor assembly, as shown, and nail or screw in place.

FIG. 3

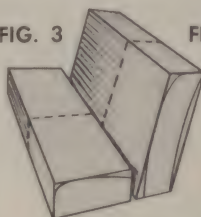


FIG. 4

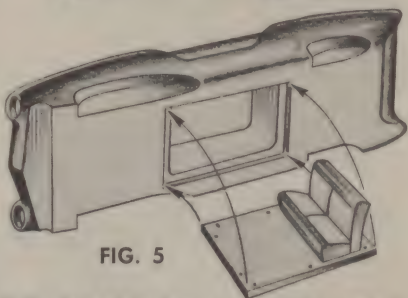
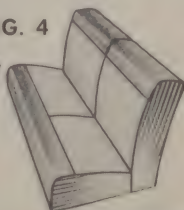


FIG. 5

STEERING WHEELS MADE BY SIMPLE METHODS



FIG. 6

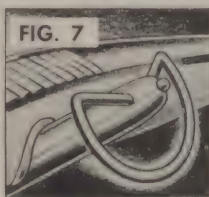


FIG. 7

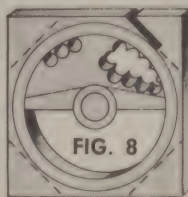


FIG. 8

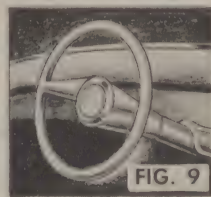


FIG. 9

Figs. 6 and 7 show how to make a steering wheel with plastic-covered wire and an old fountain-pen cap. Bend wire to shape and insert in holes drilled in pen cap. Figs. 8 and 9 show how plastic or soft metal may be drilled, sawed and filed into a steering wheel for a convertible.

• WINDSHIELDS FOR YOUR CONVERTIBLE

MAKING A PLASTIC WINDSHIELD

A transparent windshield may be made by forming a sheet of heated plastic over a wood form. First, carve, file and sand one side of a wood block to the shape of the windshield, as shown in Fig. 1. Then tack soft cloth smoothly over the carved surface. Cut the plastic sheet to shape, somewhat larger than the windshield dimensions. Then lay it on a smooth, flat surface and put it in an oven, heated to 225 degrees, until it is flexible or "rubbery." Wearing gloves, quickly place the heated plastic over the carved surface of the wood form and hold it firmly until it cools in its new form. Cut the formed plastic to the exact windshield size, with a coping saw, and file the edges smooth. The plastic coating of electric wire may be slit, removed from the wire, and then slipped over and glued to the edge of the windshield, as shown in Fig. 2.



FIG. 1

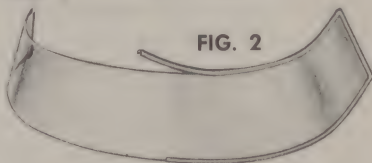


FIG. 2

TIN CONTAINER TRANSFORMED INTO WINDSHIELD

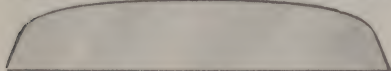


FIG. 3

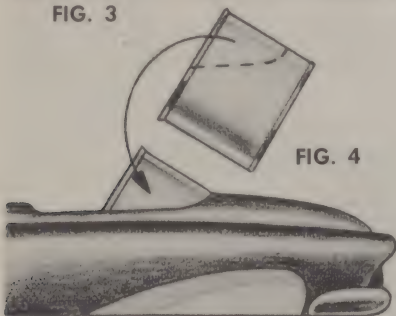


FIG. 4

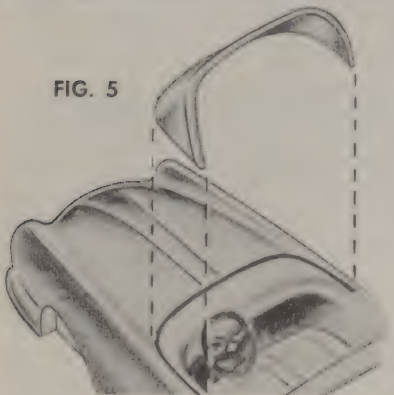
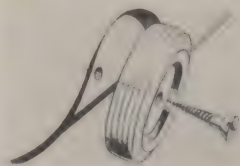


FIG. 5

An attractive windshield for a convertible model car may be made from a discarded coffee can. First, make a cardboard pattern of the windshield (Fig. 3). This pattern should be somewhat longer than the width of the model to allow for the curve. Bend the pattern to the shape of the windshield and trim the curved edge to fit the shape of the hood. Trace this pattern on the tin can, keeping the straight edge of the pattern even with the beading along the bottom edge of the can, as shown in Fig. 4. Next, cut out the bottom of the can with a smooth-cutting can opener. Then, cut through the beading with a hacksaw and cut the windshield to shape with tin snips. (Retain the beading to serve as a molding along the top of the windshield.) Bend the windshield to shape and, then, force-fit and glue it in a slot carved across the hood of the model, shown in Fig. 5. The windshield may be painted or installed with its natural shiny surface, which resembles glass.

• ATTACHING WHEELS



To make sure Guild hardened rubber wheels stay "put," attach them with screws to a wood model, as above.



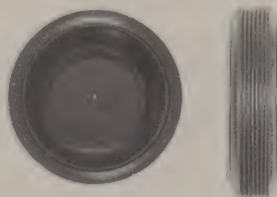
Attach half-wheels to wood car by drilling through wheel from bottom. Use wood screw, as shown above.



For plaster car, drive screw in wheel; leave $\frac{1}{4}$ inch showing. Drill hole in car; fill with plaster mix. Sink screw head.



Screw wheels on wood car model studded with brads. Cut groove across plaster model. Sink axle in a soft plaster mix.



FREE WHEELS

To get four hardened rubber wheels, free of charge, mail to the Guild a snapshot of your model—or a signed statement, from parent or teacher, that your model is ready. The wheels, shown above, are $2\frac{1}{16}$ " across and $\frac{5}{8}$ " thick. The hubcap well is $1\frac{5}{16}$ " across and $\frac{1}{8}$ " deep. *You must make your own hub caps.*

WHEEL-FENDER CLEARANCES

Exposed Front Wheels (Fig. 1)—Fully exposed front wheels (B) may be placed flush with the fender edge (A).

Partially Exposed Front Wheels (Fig. 2)—If the fenders cover any part of the front wheels at or above a line $\frac{1}{2}$ inch higher than the wheel center (D, dotted line), the wheels should be placed $\frac{5}{16}$ inch from the fender edge (C).

Enclosed Front Wheels (Fig. 3)—If the fenders cover any part of the front wheels below a line that is $\frac{1}{2}$ inch higher than the wheel center (F, dotted line), the wheels should be placed $\frac{9}{16}$ inch from the fender edge (E).

Rear Wheel Clearance—Rear wheels, if fully exposed, may be placed flush with the fender edge. Rear wheels which are not fully exposed should be placed $\frac{5}{16}$ inch from the fender edge (C Fig. 2).

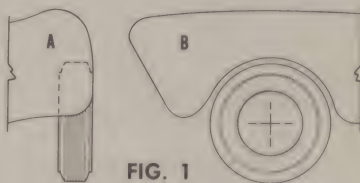


FIG. 1

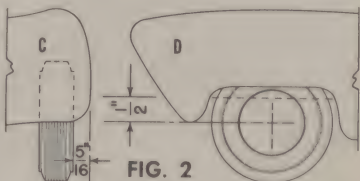


FIG. 2

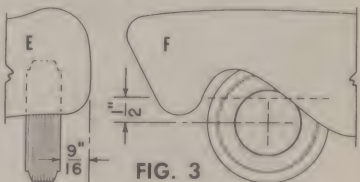


FIG. 3

• BUMPERS ARE EASY TO MAKE

FIG. 1

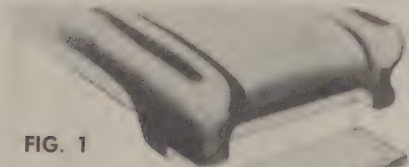


FIG. 2



FIG. 3

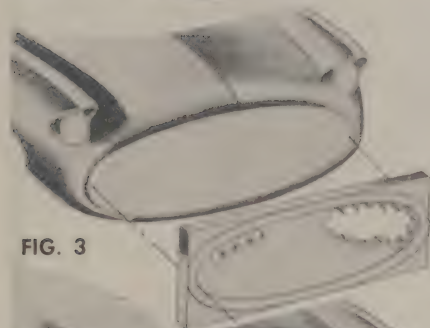


FIG. 4



FIG. 5

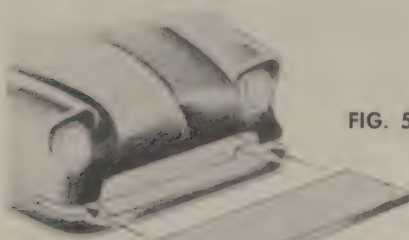
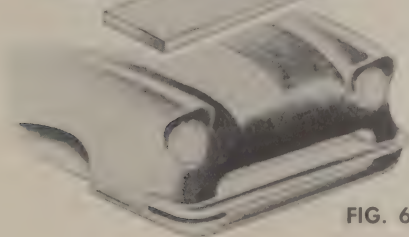
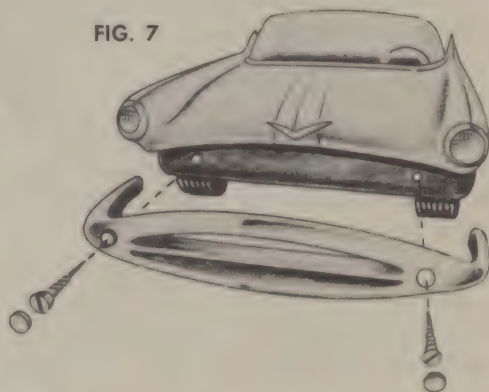


FIG. 6



Bumpers may be made from metal, like aluminum bar stock, or from straight-grained wood. The illustrations on this page show a few simple and easy methods for making attractive bumpers. Figs. 1 and 2 show how bar stock may be worked to shape and screwed into a recess under a grille opening carved in the model. A coping saw, or jeweler's saw, may be used to cut between drilled holes to make the grille shown in Figs. 3 and 4. The final shaping is done with files and emery cloth. Ornamental screen and "bombs" may be added. Figs. 5 and 6 show how slots may be cut at the ends of the carved grille to receive a bumper bar. Fig. 7 shows a simple method for attaching bumper to car with wood screws.

FIG. 7



• MOLDINGS

FIG. 1

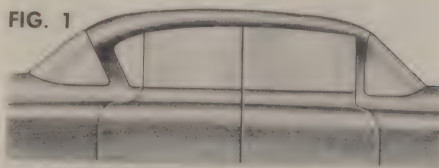


FIG. 2

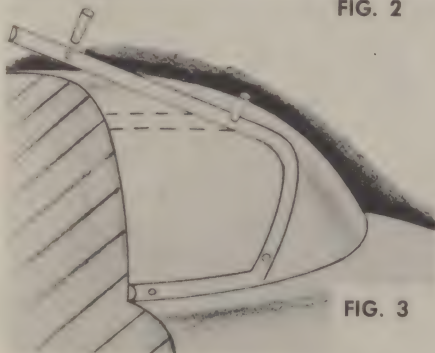


FIG. 3

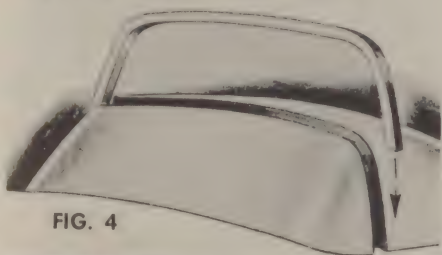


FIG. 4

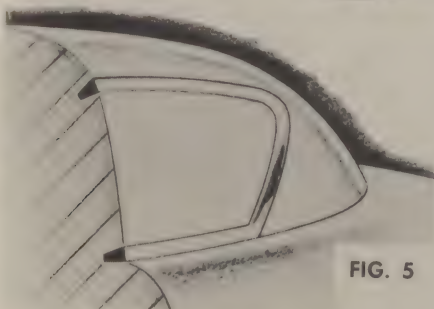


FIG. 5

Window moldings for a model car may be indicated with scored lines—or, if metal moldings are preferred, they may be set in or applied. Fig. 1 shows a model with the scored-line moldings. To make this type, outline the windows with a hard pencil and score these outlines into the surface with a knife. Then, deepen the scored lines with a small triangular file, which has been bent, while red hot, to a curve at the end. Fig. 2 shows how thin sheet aluminum may be drilled, sawed and filed to make moldings. Fig. 3 shows how moldings of this type are attached by pins driven through drilled holes. Figs. 4 and 5 show moldings made from thicker aluminum stock. These are attached to the model by being set in grooves cut into the surface. Fig. 6 shows how model railroad track may be used for moldings. The HO gauge type of track is bent to shape and set in a groove.

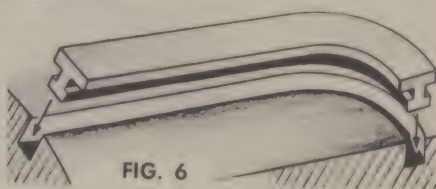
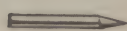
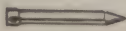


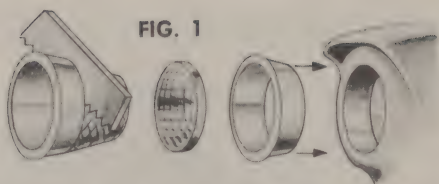
FIG. 6

COMMON FASTENERS

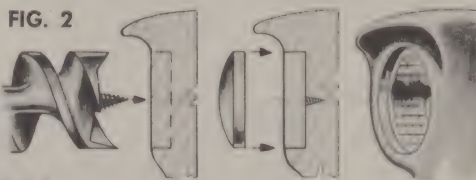


• HEADLIGHTS

Fig. 1 shows an easy method for making an attractive metal rim for a headlight. Saw off the plain rim of a thimble. Force-



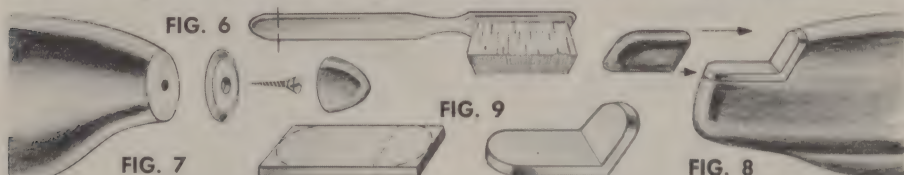
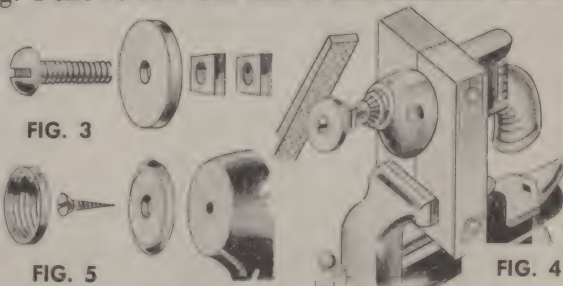
fit and glue this into a hole of proper size drilled in the fender. Then glue a lens, which has been sawed and filed to shape from plastic, into the thimble, as shown. Fig. 2 shows how to make a "French" headlight, which has the advantage of giving the model car a well-styled look without requiring metal work. Locate the lens center on the fender and, at this point, drill a hole deep enough to receive the plastic lens. The depth of the cut may be controlled by attaching a piece of tape to the bit to mark the desired depth. Press the plastic lens into the recess drilled in the front of the fender.



WASHER AND ELECTRIC DRILL

Another simple method for making a headlight is illustrated below. The process involves shaping a metal washer as it rotates in an electric hand drill. Fig. 3 shows how the washer is locked on a machine screw with two retaining nuts. Fig. 4 shows how the end of the machine screw is put in the chuck of the electric drill.

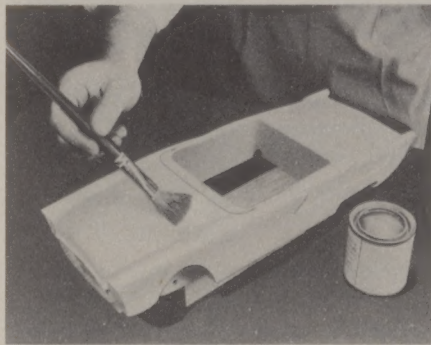
Clamp the electric drill securely in the vise, using wood blocks to protect it. After shaping the washer with a file, smooth it with fine emery cloth and polish with fine compound on a soft cloth. Fig. 5 shows how the washer may be fastened to the front of the fender with a wood screw. The plastic lens is then glued in place, centered over the screw head.



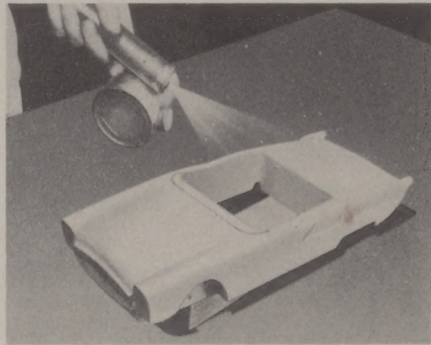
• **TAIL LIGHTS** may be made from the red plastic handles of old toothbrushes (Fig. 6). File, sand and polish the end of the handle to the desired shape before cutting it off. Metal mounts, as shown in Figs. 7 and 8, give the lights a finished appearance. Fig. 9 shows how one type of metal mount is sawed and filed from sheet aluminum, the edges polished, and then bent to shape.

• PAINTING YOUR MODEL CAR

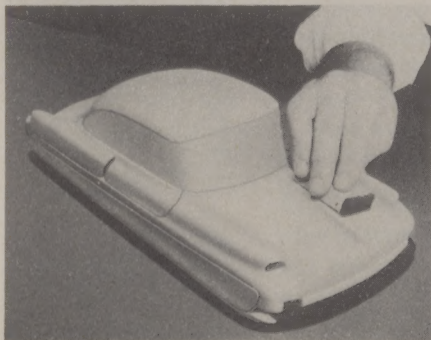
The most important step in putting a gleaming finish on your model is sandpapering the bare surface. **YOU CANNOT HIDE ROUGH SPOTS, PITS OR OTHER FLAWS WITH PAINT.** Fill all low spots with a glaze, surfacing putty or plastic wood. Work over the surface with coarse and fine grades of sandpaper until it is smooth as glass. *Only this kind of surface will take a fine finish.* The first step in painting your model is to apply one or two coats of sealer. Allow the first coat to dry over night—the last, several days—and sand last coat to a smooth surface with 180 grit dry sandpaper. Next, apply primer-surfacer—three coats for plaster and hardwoods, five or more coats for softer woods. (For balsa wood, ten or more coats of lacquer-type primer-surfacer are recommended. Carefully sand each coat.) Next, score in door lines, trunk lines, etc.,—or sharpen them if you made them in the surface of your model. *Use lacquer* for the final finish—at least three coats. Sand each coat, except the last, lightly but thoroughly with 360 to 400 grit waterproof sandpaper. **BE SURE NOT TO SAND THE LAST COAT.** Rub down the last coat with a rubbing compound after it is thoroughly dry—then apply hard wax and polish the surface to a brilliant finish.



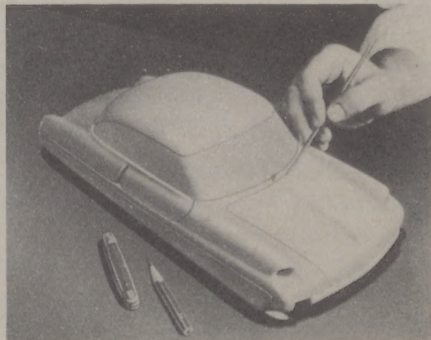
After thoroughly sanding the surface of the model car, apply one or two coats of sealer.



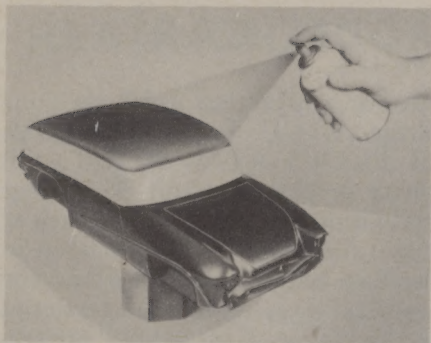
Apply three to five coats of primer-surfacer for most woods—for balsa, use 10 coats.



Permit each coat of primer-surfacer to dry thoroughly and sand carefully between coats.



Score in door, hood and trunk lines before applying the first coat of the finish lacquer.



Use at least three coats of color lacquer. Sand between coats. Do NOT sand last coat.



Rub down last coat of lacquer with rubbing compound and polish with hard wax.

• COMMON PAINT DIFFICULTIES

Cracking and Checking:

Causes: (a) Top coats are applied before the undercoats are dry—(b) Coats are too heavy. **Cures:** (a) Always let undercoats dry thoroughly before spraying color coats—(b) Do not “pile on” coats.

Orange Peel:

Causes: (a) Improper spraying—(b) Using paint that is too thick. **Cures:** (a) Hold spray nozzle proper distance from surface—(b) Thin paint to manufacturer’s recommendations.

Runs or Sags:

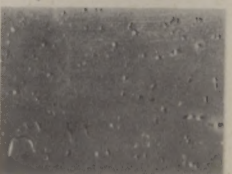
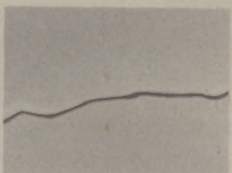
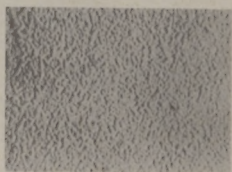
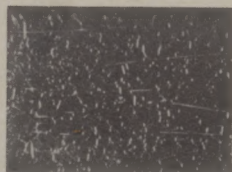
Causes: (a) Coats are too heavy—(b) Spray nozzle held too close to surface—(c) Paint too thin. **Cures:** (a) Do not apply too much paint at a time—(b) Do not hold spray nozzle too close to surface—(c) Thin paint to manufacturer’s recommendations in directions.

Blister:

Causes: (a) Wrong undercoats—(b) Wrong preparation of surface. **Cures:** (a) Follow label directions and Guild manual—(b) Make sure surface is free of grease, wax, and dirt of every description.

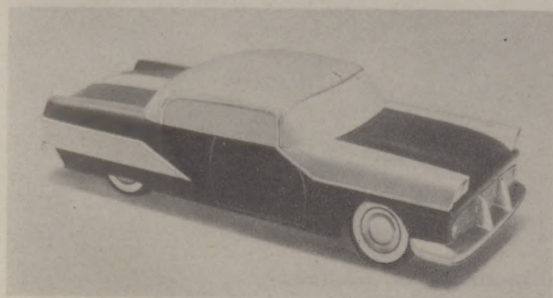
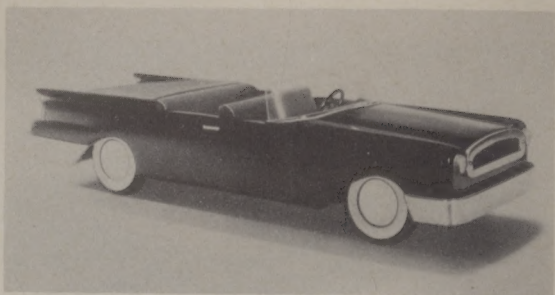
Rough Dirty Finish:

Causes: (a) Applying finish over dusty surface—(b) Dirty or dusty work area. **Cures:** (a) Wipe surface with “tack-rag” immediately before applying color coats. (A “tack-rag” can be purchased or made by working a few drops of varnish into a lint-free cloth.)—(b) Clean work area and hang up wet cloths to collect dust before painting. Inspect each coat of paint for dust.



• SIMPLE DESIGNS ALSO WIN AWARDS

Many Guildsmen make the mistake of setting too high a goal. They try to build model cars to difficult designs. The two models shown on this page are simple in design—but both won Guild awards. Both have clean, crisp lines—easy to draw and build. Bumpers and fittings are attractive



but easy to make. Grilles are simple. The builder of the convertible mounted Guild wheels with the back faces showing and painted hub caps on the centers. Beginners, particularly, should start with a simple design—and, then, do their level best to make it “tops” in workmanship and painting.

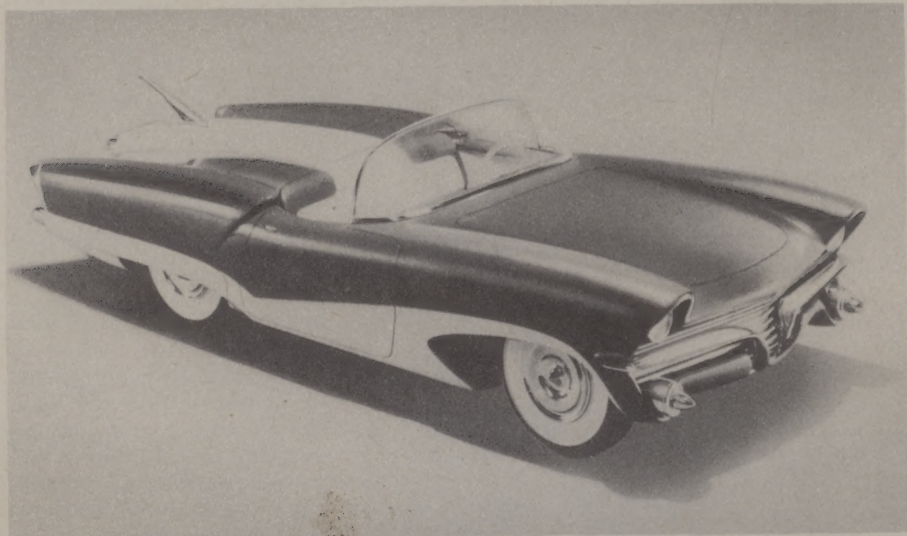
• YOU MAY DESIGN THE STYLE OF MODEL CAR THAT YOU LIKE BEST

The Guild competition gives you complete freedom to design and build whatever type of model car appeals to you the most. Now you can enjoy the thrill of turning your most extravagant dreams into reality. Originality will pay off heavily in the judging. Eight different model styles are admitted in Guild competition—and these cover the complete range of cars produced by both American and foreign manufacturers. If you are a sports car enthusiast, you may build either a convertible or hardtop type of sports car. On the other hand, you may choose, if you prefer, the more conventional convertible, 2- or 4-door sedan or 2- or 4-door 6-passenger hardtop—even a station wagon. The Guild program has been broadened to offer every young man the opportunity to enter the model type on which he can work with genuine enthusiasm. The Guild knows he will do his best on the project he likes the best.

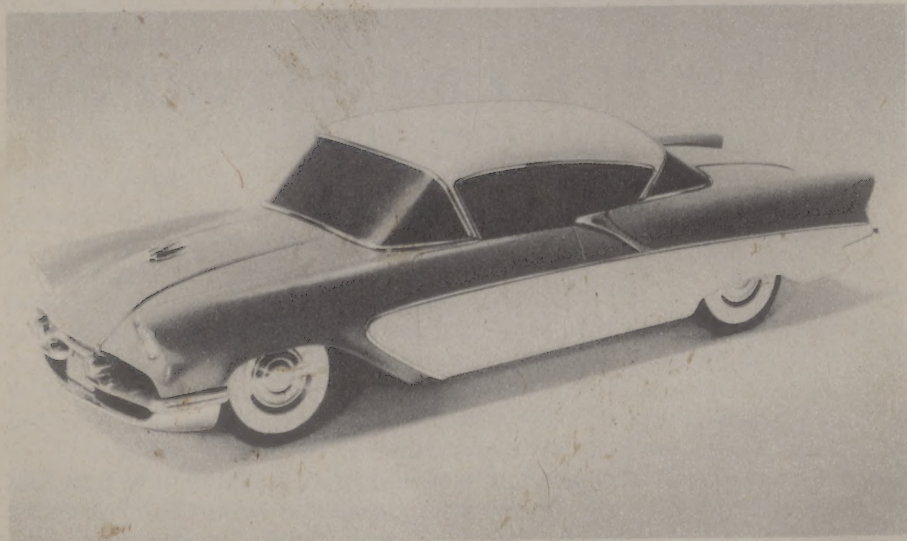
If you desire answers to problems you meet in building your model, write to:

TECHNICAL DEPARTMENT, FISHER BODY CRAFTSMAN'S GUILD
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